Activities in Nebraska

ATSDR in Partnership with Nebraska

The Agency for Toxic Substances and Disease Registry (ATSDR) is the lead public health agency responsible for implementing the health-related provisions of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). ATSDR is an Atlanta-based federal agency with more than 400 employees. ATSDR's annual budget for 2002 is $78 million. ATSDR is responsible for assessing the presence and nature of health hazards at specific Superfund sites, helping to prevent or reduce further exposure and illnesses that result, and expanding the knowledge base about the health effects of exposure to hazardous substances.

ATSDR works closely with state agencies to carry out its mission of preventing exposure to contaminants at hazardous waste sites and preventing adverse health effects. ATSDR provides funding and technical assistance for states to identify and evaluate environmental health threats to communities. These resources enable state and local health departments to further investigate environmental health concerns and educate communities. From 1989 through 2001, ATSDR provided **$833,441** in funds to **Nebraska**. In addition to direct funding, ATSDR provides technical and administrative guidance for state-conducted site activities.

ATSDR Site-Specific Activities

Public Health Assessment-Related Activities

One of the agency's important mandates is to conduct **public health assessments** of all National Priorities List (NPL) sites and of other sites where there might be a significant threat to the public health. In **Nebraska** there have been **12** sites designated to the NPL.

A **public health assessment** provides a written, comprehensive evaluation of available data and information on the release of hazardous substances into the environment in a specific geographic area. Such releases are assessed for current or future impact on public health. ATSDR, in conjunction with public health and environmental officials from **Nebraska**, have conducted **13** health assessments in the state.

A **health consultation** is a written or oral response from ATSDR to a specific request for information about health risks related to a specific site, chemical release, or hazardous material. It is a more limited response than a public health assessment. To date, **90** documented health consultations have been conducted at **29** sites in **Nebraska.** An example of a health consultation conducted in the state follows.

> **Omaha Lead, Omaha** - In March 2000, ATSDR finalized a Health Consultation requested by the Environmental Protection Agency (EPA). The EPA asked ATSDR to review activities planned for a time-critical removal of lead contaminated soil at childcare centers and residences near the Omaha Lead site. ATSDR was asked to determine if the proposed soil clean-up levels would reduce the public health threat from lead exposure and if the removal actions would likely result in reduced blood-lead levels in the exposed population. ATSDR concluded that the proposed remediation is likely to result in reduced blood-lead levels in the exposed populations.

ATSDR also concluded that lead paint and other potential sources of lead may be responsible for increased blood lead concentrations in the population. Therefore, children residing on these properties in the future may be at risk unless a long-term blood testing plan is in place for the community. ATSDR recommended that EPA ensure that a comprehensive assessment of potential lead sources (e.g., lead-based paint) is conducted at each of the properties remediated, and that EPA develop a protocol to monitor blood-lead levels in children in areas where there is currently no elevated blood-lead level, but where soil-lead concentrations have exceeded the clean-up level.

In July 2002, ATSDR completed a site visit and participated in a public meeting given by the Lead Safe Omaha Coalition. The site has been proposed to the NPL and is expected to be added to the list by January 2003. ATSDR has begun work on the public health assessment and should have the document completed by spring 2003.

An **exposure investigation** is conducted to develop better characterization of past, current, and possible future human exposures to hazardous substances in the environment, and to evaluate existing and possible health effects related to those exposures. The two main ways information is gathered during an exposure investigation are bio-medical testing and environmental sampling at human exposure points. Following is an example of an exposure investigation conducted by ATSDR in **Nebraska**.

Dakota City/South Sioux City - Beginning in 1996, citizens in Dakota City and South Sioux City voiced concerns that hydrogen sulfide pollution in the community might be causing health problems. In August 1996, a community organization, CITIZENS Promoting Environmental Stewardship, requested that ATSDR conduct a community exposure investigation to determine if ambient and indoor air levels of hydrogen sulfide threatened their health. Residents were concerned about odors, respiratory problems (including asthma), and neurological symptoms (headache, excessive fatigue, limb pain). Since 1996, ATSDR has worked closely with staff from other agencies such as the EPA Region 7 office, the **Nebraska** Departments of Environmental Quality and Health and Human Services, the Dakota County Health Department, and local elected officials - county and city alderman.

Exposure to low levels of hydrogen sulfide can cause eye, nose, and throat irritations. Moderate levels can cause headache, dizziness and neurological imbalances, breathing difficulty, nausea and vomiting; high levels can lead to shock, convulsions, coma, and death.

To evaluate exposure, ATSDR, in collaboration with the EPA, conducted independent hydrogen sulfide air monitoring in six Dakota City residences between April and June 1997. As part of this investigation, **Nebraska** officials identified 13 potential sources of hydrogen sulfide in the community, including a large food processing plant with a tannery and a municipal sewer vent.

The air data findings and the residents' subjective feelings and symptoms were consistent with symptoms associated with hydrogen sulfide exposure. ATSDR concluded that indoor and outdoor levels of hydrogen sulfide and other sulfur compounds posed a threat to public health.

Health Studies

Health studies are conducted to determine the relationships between exposure to hazardous substances and adverse health effects. Health studies also define health problems that require further investigation through, for example, a health surveillance or epidemiological study. Following is an example of a health study that was conducted in **Nebraska**.

Cornhusker Army Ammo Plant (CAAP) - A symptom and disease prevalence study was conducted to investigate and assess the health status of persons living in the vicinity of CAAP versus a similar comparison area. The self-reported prevalence of illnesses and symptoms was measured and biomedical testing was conducted to examine for evidence of organ damage or dysfunction of the renal, hepatobiliary, and immune systems. Data collection was conducted in the fall of 1993. Questionnaire information along with biological specimens (urine and blood) were collected from 300 participants in the target area and 300 participants in the comparison area. A subset of the study population were administered a battery of neurobehavioral tests. The principal contaminants were neurotoxic agents. There were no differences between the target population levels and established reference levels. No statistical differences between target and comparison groups were detected for any of the six functional groups of neurobehavioral tests. The final report was published in September 1996.

Public Health Conference Support Grants

ATSDR awards grants to state and local agencies to support public health conferences to encourage information sharing, technical discussion, and other training activities related to acute illness and chronic disease in persons exposed to hazardous substances. Two such conferences have been funded in **Nebraska**. One of these conferences was for the Douglas County Health Department - "Hazardous Material and Waste Workshop - Special Assistance to Business and Industry." The conference was held in Omaha; the target audience was small business owners (fewer than 50 employees) and their employees. The objective was to educate employees of small business and industry in the proper handling of toxic or hazardous materials and waste.

The other was a public health conference in collaboration with the **Nebraska** Public Health Department concerning occupational and environmental health.

Toxicological Profiles

The Division of Toxicology develops toxicological profiles that describe the health effects, environmental characteristics, and other information for substances found at NPL sites. These profiles contain information on the pathways of human exposure and the behavior of hazardous substances in environmental media such as air, soil, and water. Since 1995, **161** of these profiles have been sent to requesters, including representatives of federal, state, and local health and environmental departments; academic institutions; private industries; and nonprofit organizations; in **Nebraska**.

If you would like additional information, contact ATSDR toll-free at (888) 42ATSDR, that is, (888) 422-8737 or visit the homepage at http://www.atsdr.cdc.gov


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